AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listing of claims in this application.

31. (Cancelled).

32. (Cancelled).

33. (Presently amended) ~~The downhole tool assembly as claimed in claim 32,~~ A downhole tool assembly, the assembly including a downhole tool, the tool comprising:

a first body and a second body, the bodies being mounted for relative rotation;

a joint part forming a selectively releasable joint between the second body and a part of the assembly coupled to the second body; and

locking means for locking the first and second bodies relative to one another against relative rotation;

whereby locking the bodies relative to one another facilitates application of a release force through the first body to the releasable joint to release the releasable joint to thereby separate the tool from the part of the assembly,

wherein the selectively releasable joint is configured to release at a release force which is less than the force applied to make up the joint.

34. (Presently amended) The downhole tool assembly as claimed in claim ~~32~~33, wherein the downhole tool assembly comprises a downhole drilling assembly and the downhole tool includes a drilling motor for driving a drill bit of the assembly.

35. (Cancelled)

36. (Presently amended) ~~The downhole drilling assembly as claimed in claim 35,~~A downhole drilling assembly comprising:

a drill bit;

a downhole drilling motor having a motor body for coupling to tubing of the assembly and a rotatable drive shaft for coupling to the drill bit;

a selectively releasable joint located between the drilling motor and the drill bit; and

locking means for locking the drive shaft relative to the motor body;

whereby locking the drive shaft relative to the motor body facilitates application of a release force through the assembly tubing and the motor body to the releasable joint to release the releasable joint to thereby separate the drill bit from a remainder of the drilling assembly,

wherein the selectively releasable joint is configured to release at a release force which is less than the force applied to make up the joint for drilling operations.

37. (Previously presented) The downhole drilling assembly as claimed in claim 36, wherein the selectively releasable joint is configured to release at a release torque lower than 70% of the torque required to make up the joint.

38. (Previously presented) The downhole drilling assembly as claimed in claim 37, wherein the release torque is between 30-50% of the torque required to make up the joint.

39. (Presently amended) The downhole drilling assembly as claimed in claim ~~35~~36, wherein the selectively releasable joint is located between the drive shaft and the drill bit, to allow separation of the drill bit from the remainder of the drilling assembly at a location between the drill bit and the drive shaft.

40. (Presently amended) The downhole drilling assembly as claimed in claim ~~35~~36, wherein the joint comprises a threaded male pin and a co-operating threaded female box.

41. (Presently amended) A downhole tool for use in a downhole tool assembly, the tool comprising:

a first body and a second body, the bodies being mounted for relative rotation;

a joint part adapted to form a selectively releasable joint between the second body and a part of the assembly couplable to the second body; and

locking means for locking the first and second bodies relative to one another against relative rotation;

whereby, in use, locking said bodies relative to one another facilitates application of a release force through the first body to the releasable joint to release said joint so as to thereby separate the tool from said part of the assembly, wherein the joint comprises a threaded male pin and a co-operating threaded female box, and wherein the threads on the pin and box of the joint are configured such that:

$$[[1.0]]1 < \frac{\text{joint coefficient of friction}}{\tan(\text{helix angle})} < 3$$

where the tangent of the helix angle (α) is determined by:

$$\tan(\alpha) = \frac{\text{lead}}{2\Pi r_m}$$

where r_m is the thread mean radius.

42. (Previously presented) The downhole drilling assembly as claimed in claim 40, wherein the male pin is provided on an end of the drive shaft and the female box in the drill bit.

43. (Previously presented) The downhole drilling assembly as claimed in claim 40, wherein the releasable joint further comprises a coupling member, one of the coupling member and the drive shaft defining the male pin and the other one of the coupling member and the drive shaft defining the female box.

44. (Previously presented) The downhole drilling assembly as claimed in claim 43, wherein the coupling member includes a male pin for engaging a corresponding female box formed in the drill bit, for coupling the drill bit to the coupling member.

45. (Previously presented) A downhole drilling assembly as claimed in claim 40, wherein the releasable joint further comprises a coupling assembly having first and second bodies, one of the first and second bodies defining the pin and the other of the first and second bodies defining the box.

46. (Previously presented) The downhole drilling assembly as claimed in claim 45, wherein each of the first and second bodies have standard tapered threaded joints for coupling one of the first and second bodies to the drive shaft, and the other of the first and second bodies to the drill bit.

47. (Previously presented) The downhole drilling assembly as claimed in claim 42, wherein threads on the male pin and the female box forming the releasable joint are configured to release at a lower torque than the make up torque.

48. (Presently Amended) The downhole drilling assembly as claimed in claim ~~35~~36, wherein the releasable joint is a substantially cylindrical threaded joint.

49. (Presently Amended) The downhole drilling assembly as claimed in claim ~~35~~36, wherein the locking means comprises locking members adapted to engage at least a part of the motor, to lock the drive shaft relative to the body of the motor.

50. (Previously presented) The downhole drilling assembly as claimed in claim 49, wherein the locking members are placed in a string of the assembly tubing at surface for transportation down the string to the motor.

51. (Previously presented) The downhole drilling assembly as claimed in claim 49, wherein the locking members comprise locking balls.

52. (Previously presented) The downhole drilling assembly as claimed in claim 49, wherein the motor is shaped at an end thereof which is upstream in use to define at least one space for receiving the locking members.

53. (Presently Amended) The downhole drilling assembly as claimed in claim ~~35~~36, wherein the drilling motor comprises a fluid driven turbine.

54. (Presently Amended) The downhole drilling assembly as claimed in claim ~~35~~36, wherein the drilling motor comprises a positive displacement motor.

55. (Cancelled)

56. (Cancelled)

57. (Cancelled)

58. (Cancelled)

59. (Presently Amended) ~~The method as claimed in claim 55,~~ A method of selectively releasing a drill bit of a downhole drilling assembly from a remainder of the assembly, the method comprising the steps of:

providing the drilling assembly with a selectively releasable joint between a drilling motor of the assembly and the drill bit, and a locking means for locking a rotatable drill bit drive shaft of the drilling motor relative to a body of the motor;

activating the locking means to lock the drive shaft against rotation with respect to the motor body;

applying a rotational release force through tubing of the assembly and the motor body to release the releasable joint and separate the drilling motor from the drill bit; and

recovering the remainder of the drilling assembly to surface,

wherein the step of applying a rotational release force further comprises applying a release torque to generate the release force, and wherein the release torque is less than the torque required to make up the drilling assembly.

60. (Previously presented) The method as claimed in claim 59, wherein the applied release torque is between 30-50% of the make up torque.

61. (New) The method as claimed in claim 59, further comprising providing the selectively releasable joint between the drive shaft and the drill bit.

62. (New) The method as claimed in claim 59, wherein the step of activating the locking means further comprises passing locking members down through the assembly tubing and into a part of the motor, to cause the drive shaft to lock relative to the motor body.

63. (New) The method as claimed in claim 62, wherein the locking members are inserted into the assembly tubing at surface and transported through the tubing to the motor.